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## RECORD OF DECISION

USDA Forest Service

FINAL ENVIRONMENTAL IMPACT STATEMENT

VEGETATION MANAGEMENT

IN THE COASTAL PLAIN/PIEDMONT

February 27, 1989

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## RECORD OF DECISION

USDA, FOREST SERVICE

### Final Environmental Impact Statement Vegetation Management -- Coastal Plain/Piedmont

#### I. INTRODUCTION

This document describes my decision on how the vegetation management program will be conducted on the 4.6 million acres of national forests and grasslands in the Coastal Plain/Piedmont. These lands include all or parts of 23 national forests (NFs) and two national grasslands (NGs) in eight states:

Alabama: Conecuh, Talladega (Oakmulgee Division) and Tuskegee NFs

Florida: Apalachicola, Choctawhatchee, Ocala and Osceola NFs

Georgia: Oconee NF

Louisiana: Kisatchie NF

Mississippi: Bienville, Delta, DeSoto, Holly Springs and Homochitto NFs

North Carolina: Croatan and Uwharrie NFs

South Carolina: Francis Marion and Sumter (except Andrew Pickens Ranger District) NFs

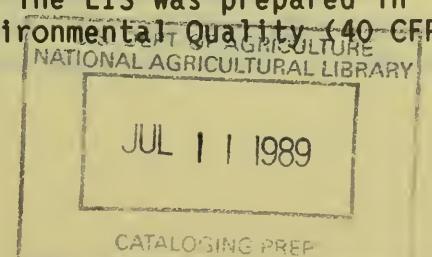
Texas: Angelina, Davy Crockett, Sabine and Sam Houston NFs  
Caddo and Lyndon B. Johnson NGs

Vegetation management is the manipulation of plants to benefit resources such as wildlife, range and timber, and investments in rights-of-way. Activities include fuel reduction to lessen wildfire risk; maintenance of trails, roads and utility lines to promote their safe and efficient use; site preparation for reforestation; improvement of wildlife habitat, including that of threatened, endangered, proposed and sensitive species; and control of unwanted plants in timber stands and on range lands.

Five different methods can be used to do vegetation management. They are prescribed fire, herbicides, and mechanical, manual and biological methods.

My decision is based on findings of an environmental impact statement (EIS) prepared for the Coastal Plain/Piedmont. My decision sets overall direction for the vegetation management program. It specifies methods and tools allowed, intensity and frequency of treatments used, and mitigation measures required for all vegetation management projects. It does not make project-level decisions, which must be based on detailed site-specific analyses as required by the National Environmental Policy Act (NEPA).

The EIS was prompted by development of new vegetation management tools, including certain herbicides, in recent years; by concerns voiced by some people about possible adverse effects of some vegetation management methods; and by the fact that Forest Land and Resource Management Plans (Forest Plans) did not address some of these effects in detail. The EIS was prepared in compliance with regulations of the Council on Environmental Quality (40 CFR 1500-1508) implementing NEPA.



The EIS examines environmental effects of the vegetation management methods. It was prepared by an 18-person interdisciplinary team (Final EIS volume I, chapter V). Its preparation included: (1) using public comments to identify issues; (2) developing alternatives and analyzing their effects based on all relevant research; (3) publishing a Draft EIS that identified a preferred alternative; (4) evaluating public comments on the Draft EIS; and (5) preparing a Final EIS that responded to these comments, expanded some analyses and modified the preferred alternative.

This Record of Decision describes the alternatives we considered and how we involved the public. It also describes the alternative (**MODIFIED G**) I have chosen and the reasons for my decision. My decision is being implemented by amending the Forest Plans for the Coastal Plain/Piedmont (exhibits B through J of this Record).

## II. ALTERNATIVES

Ten alternatives were originally developed in response to public issues and management concerns. The amount and nature of vegetation management varies greatly among these alternatives. Two alternatives were eliminated from detailed study (Final EIS volume I, page II-20).

### Alternatives Eliminated from Detailed Study

1. Maximum vegetation control would be sought without regard for laws that protect vital resources. This alternative was not studied in detail because it would violate some important laws such as the Endangered Species Act and the Clean Water Act. The added control it would achieve is not needed and would not justify its major impacts on resources such as water, soil and threatened and endangered species.
2. Use of prescribed fire would be eliminated. This alternative was not studied in detail because prescribed fire is needed to maintain habitats for many threatened and endangered species and is the only practical method we have to reduce hazardous fuel buildups and minimize risk of destructive wildfires. It is considered by most people to be a vital ecological process that can be managed safely. Prescribed fire has been used throughout the Coastal Plain and Piedmont for several decades.

### Alternatives Analyzed in Detail

Eight alternatives were analyzed in detail in the Draft EIS. They range from doing nothing to increasing the amount and intensity of vegetation management above present levels. They also vary the methods and tools allowed, the intensity and frequency of treatments used, and the mitigation measures required at the project level. Following is a brief description of these alternatives, plus alternative **MODIFIED G** which first appeared in the Final EIS.

#### Alternative A

No vegetation management would be allowed. This is the no action alternative. It was developed to comply with 40 CFR 1502.14 and to respond to those who want no active resource management done.

### Alternative B

Minimum vegetation management would be done, only for critical fuel reduction, corridor maintenance and habitat protection for threatened, endangered, proposed and sensitive species. Treatment would be postponed until damage occurs. Number of acres treated and intensity and frequency of treatments would be sharply reduced from the present. New mitigations would be added to those now in Forest Plans to increase protection of human health and safety, plants, animals, soil and water. This alternative was developed to respond to those who want vegetation management done only to provide minimum protection for public safety and threatened and endangered species.

### Alternative C

Limited vegetation management would be done. All vegetation management activities would receive treatments, but these would usually be postponed until damage was imminent. As a result, number of acres treated would be less than at present. Intensity and frequency of treatments would also be reduced. Manual methods would be used more than at present. The same new mitigations added to alternative B would be required. This is the environmentally preferable alternative, because it would have minimal impact on soil, water and air and would promote recovery of threatened and endangered species just as well as any other alternative. It was developed to respond to those who want less vegetation management done with less disturbance than at present.

### Alternative D

Use of herbicides would be eliminated. Use of prescribed fire, mechanical and manual methods would expand from the present to make up for the loss of herbicides. Number of acres treated and frequency of treatments would be at present levels, but intensity of treatments would be reduced. The same new mitigations added to alternative B for methods other than herbicides would also be required here. This alternative was developed to respond to those who oppose use of herbicides.

### Alternative E

Use of manual methods and prescribed fire would increase from the present, and use of mechanical methods and herbicides would decrease. Number of acres treated and frequency of treatments would be at present levels, but intensity of treatments would be reduced. The same new mitigations added to alternative B would also be required here. This alternative was developed to respond to those who want vegetation management done with more reliance on methods perceived as "natural" such as hand labor and fire, and less on those perceived as "artificial" such as herbicides and machinery.

### Alternative F

The same mix of methods, number of acres treated and intensity and frequency of treatments now specified in Forest Plans would be imposed. Only mitigations now in these Plans would be required. This is the current management alternative.

### Alternative G

Use of herbicides and prescribed fire would increase from the present, and use of mechanical methods would decrease. Number of acres treated and frequency of treatments would be at present levels, but intensity of treatments would be reduced. Aerial application of herbicides would be allowed for some site preparation and utility line maintenance. The same new mitigations added to alternative B would also be required here. This was the Draft EIS preferred alternative. It was developed to analyze a full range of methods and tools that would provide effective vegetation management with less environmental disturbance than at present.

### Alternative MODIFIED G

In response to public comment on the Draft EIS, alternative G was modified by reducing use of herbicides in favor of low-disturbance mechanical tools, and by reducing the proportion of herbicides applied by broadcast (aerial and ground) methods. Use of grazing as a biological method was also eliminated. This alternative falls within the range of actions and effects of the other alternatives. It is the Final EIS preferred alternative and the one I have decided to implement.

### Alternative H

Vegetation management would be done to the maximum extent allowed by law. As a result, number of acres treated and intensity and frequency of treatments would increase from the present. Intensive use of herbicides, mechanical methods and prescribed fire would be strongly favored, and manual methods would be nearly eliminated. Aerial herbicide application would be allowed for most pine release, some site preparation and utility line maintenance, and a small amount of range forage improvement. Only mitigations now in Plans would be required. This alternative was developed to establish a full range of alternatives and to respond to those who want maximum production of market goods.

## III. PUBLIC PARTICIPATION

We sought a high level of public involvement to develop the issues on which our analysis focused. Notices of intent describing our project were published in the Federal Register. Letters were mailed to over 11,000 persons, groups and agencies asking for their help in identifying issues. The media were involved and a press release was widely distributed. Key political and environmental organizations were contacted and mailed an informational brochure. Each forest and grassland also made efforts to reach interested and affected people. Over 5,000 copies of a tabloid discussing the EIS were later distributed.

Nearly 900 people from 28 states responded with comments on issues. Their ideas were combined into 11 major issues (see section V, pages 8 to 13 of this Record). In total, these issues express many conflicting values. Each alternative responds to all issues to some degree.

The Draft EIS was released in May 1988. NEPA regulations require a 45-day comment period. We allowed 90 days to give people enough time for thorough review. We received letters commenting on the Draft EIS from 348 persons, groups and agencies. The team analyzed all comments and responded to the substantive ones as required by 40 CFR 1503. Copies of all comment letters and our responses are in Final EIS volume III.

Many comments expressed concern for possible adverse effects of a certain vegetation management method; nearly 80 percent of these involved herbicides. Many supported a certain alternative; alternative G (preferred in the Draft EIS) got the most support, but many wanted one that eliminated herbicides, reduced their use, or cut back the entire vegetation management program (alternatives B, C, D and E).

Despite strong support for alternative G, many people felt that its increased use of herbicides, especially when applied by aerial or other broadcast methods, might pose too much risk to human health, water quality, plants and animals. Our analysis showed some of these points to have merit. As a result, three basic changes were made from Draft to Final EIS:

1. Alternative G was revised to form **MODIFIED G**, and all alternatives were discussed more thoroughly (Final EIS volume I, chapter II, section B).
2. Nine more mitigations were added to the list already published in the Draft EIS (volume I, chapter II, section E). Many others were strengthened. The new mitigations increase protection of people and the environment above those in existing Plans and the Draft EIS.
3. Several analyses were expanded and discussed more thoroughly (Final EIS volume I, chapter IV).

#### IV. DECISION

I have decided to implement alternative **MODIFIED G**. This alternative reflects my desire to fully protect the public and our workers and to reduce treatment intensity as we manage the national forests and grasslands. It is meant to stress prevention of vegetation management problems before they occur in order to maintain forest health. This alternative is described in Final EIS volume I, pages II-15 to II-17. Some of its central points are:

1. Number of acres treated and frequency of treatments will be at Forest Plan levels. About 553,500 acres, or 12 percent of the national forests and grasslands in the Coastal Plain/Piedmont, are projected for some kind of treatment each year.
2. Use of herbicides, prescribed fire and manual methods will increase from the present, and use of mechanical methods will decrease. Projected changes in approximate acres treated per year, from alternative F (present) to G (Draft EIS preferred) to **MODIFIED G** (Final EIS preferred), are:

	<u>Alternative F</u>	<u>Alternative G</u>	<u>Alternative MODIFIED G</u>
Herbicides (ground)	26,800	42,300	37,000
Herbicides (aerial)	0	7,000	2,500
Prescribed Fire	463,000	467,000	467,000
Mechanical	59,200	32,300	41,600
Manual	4,400	4,800	5,300

a. Of the projected 12,700-acre increase from the present in herbicide use, 51 percent will occur in roadside maintenance, 23 percent in site preparation, 10 percent in wildlife habitat improvement and 8 percent in utility line maintenance. Herbicides may be applied by hand (backpack sprayer, shotgun, hypo-hatchet, injector, axe/sprayer), machine (boom sprayer, granular spreader) or air (helicopter).

(1) Only herbicides with least health and environmental risks (class A, Final EIS table II-1) will be applied, at not more than typical rates (Final EIS page II-59). Class A herbicides are dicamba, fosamine, glyphosate, hexazinone, imazapyr, picloram, sulfometuron methyl and triclopyr. Also available for use are the additives diesel oil, kerosene and limonene. Class B and C herbicides (2,4-D; 2,4-DP; tebuthiuron) will not be used without my express approval, which will be granted only if a site-specific analysis shows that no class A herbicide would be effective and all adverse effects will be fully mitigated.

(2) Selective treatments that apply herbicides directly to individual plants will be the first-choice method of application. Only selective treatments will be allowed in trail maintenance and all direct wildlife habitat improvement. Broadcast treatments will be allowed only in roadside and utility line maintenance, site preparation, and range forage and timber stand improvement, and then only when site conditions require them.

b. Use of prescribed fire will increase from the present only in site preparation. Only low to moderate intensity burns will be allowed; they may be ignited by ground and aerial ignition tools. Growing season burns will be allowed to maintain certain fire-dependent ecosystems.

c. Of the projected 17,600-acre decrease from the present in use of mechanical methods, 56 percent will occur in site preparation, 33 percent in roadside maintenance, and 6 percent in utility line maintenance. Only low to moderate disturbance tools (mowing, chopping, shearing, ripping, scarifying, piling, bedding, light disking) will be allowed.

d. Use of manual methods will increase from the present in wildlife habitat and timber stand improvement. Hand (axe, blade, clipper) and power tools (chain saw, brush cutter) will be allowed.

e. Biological methods by livestock grazing will not be allowed. The heavy grazing required for pine release would be hard to manage and would severely impact soil and vegetation. Other forms of biological control (microbes, insects, mulches, etc.) will not be used unless they are proven to be successful at operational levels.

3. Upon approval by the Chief of the Forest Service, aerial herbicide application will be allowed on a projected 2,500 acres per year. It will be used only for pine site preparation (1,500 ac/yr) and utility transmission line maintenance (1,000 ac/yr) on difficult sites, such as remote areas with rugged terrain or very dense growth, where other methods are impractical. For better control of herbicide placement, only helicopters will be used.

4. Selective herbicide treatments, those applied directly to individual plants, will increase from the present. The proportion of herbicides applied selectively will increase slightly from the present in all activities except site preparation and utility line maintenance.

5. Intensity of treatments will be reduced from the present to lessen potential adverse effects on plants, animals, soil and water. Severe slash burns, raking and heavy disking will not be allowed.

6. Integrated Pest Management (IPM) principles that stress prevention of problems will be used to set strategies for vegetation management projects. Depending on results of site-specific analyses, the decision on a given project may be not to use a certain method, such as herbicides, or even to do nothing. No action, or doing nothing, will be an option on all projects in compliance with NEPA.

7. New mitigations in addition to those now required will be used to protect human health and the environment. A LIST OF ALL 85 MITIGATIONS REQUIRED BY THIS DECISION IS IN EXHIBIT A OF THIS RECORD. Mitigations now required in Plans reflect existing laws and policies and past experience and research. The new mitigations are based on our analyses (Final EIS volume I, chapter II, section E). Some appeared in the Draft EIS; others were added to the Final EIS based on public comment and further analysis.

These mitigations are the very heart of the EIS. They are designed to allow the vegetation management program to be carried out with minimal adverse impact on the environment. They protect human health and safety; vegetation; wildlife and aquatic animals; threatened, endangered, proposed and sensitive species; soil; water; air quality; visual quality and cultural resources. Effectiveness of these mitigations will be evaluated through the monitoring program described in each Forest Plan as specified in Final EIS volume I, chapter II, section E.

In summary, **MODIFIED G** changes from present direction by: (1) increasing use of least-risk herbicides, applied at lowest effective rates; (2) allowing limited use of aerial herbicide application; (3) increasing the proportion of herbicides applied directly to individual plants; (4) eliminating high intensity prescribed fire and mechanical tools; (5) expanding use of growing season burns to maintain fire-dependent ecosystems; and (6) placing tighter constraints on use of vegetation management methods, especially herbicides.

#### V. RATIONALE FOR DECISION

I chose alternative **MODIFIED G** because, in my professional opinion, it does the best overall job of meeting my three main criteria for vegetation management: (1) to protect human health and safety; (2) to promote the long-term health and productivity of our forests and grasslands; and (3) to meet the goals and objectives set by our Forest Plans.

Vegetation management is needed to promote forest health, protect investments and support the production of various resources. I feel this decision meets the requirements of the many laws and regulations under which national forests and grasslands are managed. Some of the important laws I considered in my decision are the Endangered Species Act (16 USC 1531), the National Forest Management Act (16 USC 1600), the Clean Water Act (33 USC 1251), the Clean Air Act (42 USC 7401) and the National Historic Preservation Act (16 USC 470).

My decision, like most, must satisfy many different needs. I strove for a balance of protecting people and the environment and meeting our basic resource management goals. Given the broad range of sometimes conflicting public comments, it was not possible to satisfy everyone. However, considering all factors as revealed in the Final EIS, I believe **MODIFIED G** best satisfies these needs and opinions in total.

### Analytical Background

The Final EIS documents the most rigorous analysis of environmental effects of vegetation management we have ever done. We used all the relevant data we could find. Over 1,000 research papers are cited in the EIS. We tried to consider and analyze all pertinent effects in chapter IV.

The Risk Assessment (Final EIS appendix A) is a complex scientific document that takes a very hard look at potential risk to human and wildlife health from 11 herbicides, three additives and their associated inert ingredients. It analyzes the potential for each chemical to cause toxic effects, cancer, mutations and birth defects due to typical and maximum applications and accidental spills. It also evaluates bioaccumulation and synergism of these chemicals. It was subjected to rigorous scientific review.

We identified several gaps in our data. Most relate to exposure of humans and animals to herbicides and to their long-term, synergistic and cumulative health effects. Data gaps also exist for some soil and sediment effects. To bridge these data gaps and allow us to make a reasoned choice among alternatives, we followed the requirements of 40 CFR 1502.22 on incomplete or unavailable information. The team used a modeling approach in the Risk Assessment and chapter IV to give quantitative estimates of risk whenever possible. Our analyses are very conservative; that is, they deliberately magnify risks to evaluate a maximum effect and keep us on the safe side.

Following are my reasons for choosing alternative **MODIFIED G**. They are based on the facts of our analyses. My discussion is organized by the major issues the public helped us identify.

### Balance of Resources

Some people feel that too much emphasis is placed on producing wood and not enough attention is given to wildlife, water and other resources. However, 87 percent of the treated acres in the vegetation management program occur in non-timber activities. These are fuel reduction (38 percent), wildlife habitat improvement (30 percent), range forage improvement (12 percent), and maintenance of trails, roadsides and utility lines (7 percent).

Alternatives A and B would not allow us to meet the resource goals set by our Plans. They would not even achieve recovery of some threatened and endangered species as required by the Endangered Species Act. They would also increase wildfire risk from the present. I find these alternatives unacceptable.

Alternative C is the environmentally preferable alternative, mostly because it treats fewer acres at a much-reduced intensity than at present. But it would not protect threatened, endangered, proposed and sensitive species any better than alternatives D through H. It also would not protect soil, water and air substantially better than MODIFIED G. It would not treat enough acres to fully meet the resource goals for wildlife habitat, range forage and forest growth shown in our Forest Plans. These goals reflect the productive capacity of our lands to satisfy public demand for these resources. In total, I find that alternative C is not as desirable as MODIFIED G even though it would cause slightly fewer adverse environmental impacts.

Use of intensive fire and mechanical tools in alternative F, and their expanded use in alternative H, would have more impact on soil, water and cultural resources than any other alternative. Alternative H would pose the highest health risks, largely because herbicides would be applied at maximum rates without use of our new mitigations. Such effects make F and H unacceptable.

Alternatives D and E would eliminate use of intensive fire and mechanical tools, reduce or eliminate herbicide use and increase use of manual and light mechanical tools. These tool mixes would increase employment opportunity from the present. However, our experience is that manual methods are often less effective and sometimes require more repeat treatments, especially on more productive sites. They also pose the highest risk of serious accidents. Due to our wide variety of climatic, soil and growing conditions, we need the flexibility provided by a wider range of tools than these alternatives allow to ensure that vegetation is treated effectively.

Alternatives G and MODIFIED G would achieve a high degree of flexibility to meet multiple resource needs by retaining an effective range of tools that are "light on the land". Our class A herbicides can control vegetation as effectively as intensive fire and mechanical tools and have less impact on soil, water and cultural resources. MODIFIED G would do the best job since its more selective herbicide use would permit more precise control of results through more direct treatment of individual plants.

### Herbicides, Health and Safety

Many people are intensely concerned about possible adverse effects of herbicides, especially on human health and certain plants and animals. These effects could not occur in alternative A or D which would allow no herbicide use, and would be extremely low in alternatives B, C and E which would sharply reduce herbicide use from the present. We developed MODIFIED G in response to these concerns. It will reduce potential adverse effects of herbicides from alternatives F, G and H in three ways. First, it will reduce total acres treated with herbicides by 20 percent, and the acres treated aerially by over 60 percent, from alternative G. Second, it will increase selectivity of herbicide treatments, which will further reduce our low application rates by placing herbicides only on individual plants. Third, it will require stringent mitigations to reduce herbicide impacts; many of these mitigations are not yet in force.

With all mitigations in force, worker health risks from herbicides will be well below published health and safety standards. Such risks for the public are a small fraction of those for workers. Key mitigations for herbicide use require:

1. Use of class A (least-risk) herbicides with low toxicity and short persistence (Final EIS volume I, page II-58). The class A herbicides have half-lives of 6 days to 2 months, so almost none remains a year after application.
2. Low application rates, all less than half the label rate allowed by EPA (Final EIS volume I, pages II-58 and II-59).
3. Strong preference for selective (rather than broadcast) treatments, which affect only individual plants and further reduce application rates (Final EIS volume I, page II-59).
4. Careful timing of treatments to reduce visual effects and exposure of the public to herbicides (Final EIS volume I, page II-59).
5. Protective clothing and procedures which sharply reduce worker exposure to herbicides (Final EIS volume I, page II-61).
6. Clearly-marked buffers which protect the public, other landownerships, water and certain (including threatened, endangered, proposed and sensitive) plants and animals from herbicide drift and runoff (Final EIS volume I, pages II-62 and II-63).
7. Strict controls to avoid the occurrence of rare accidental spills and to quickly contain and clean them up (Final EIS volume I, page II-64).

Applied at our typical rates, each class A herbicide provides greater health protection to workers, the public and wildlife than is required by published health and safety standards. None has been shown to cause cancer, mutations or birth defects, or to accumulate in the food chain or the bodies of humans or animals. Used with the required mitigations, each can be applied at typical rates without significant risk to human or wildlife health or the environment.

Reducing application rates and increasing treatment selectivity will cause the per-acre rate of herbicides applied in the general forest area to drop from the present. Unlike many agricultural areas where herbicides are applied once or more each year, herbicides on national forests are usually applied to establish and release new stands only once or twice every 40 to 80 years. Even our treatments for wildlife habitat, range forage, roadsides and utility lines occur on 2 to 6 year cycles that far exceed the toxic life of our class A herbicides in the environment (Final EIS volume II, appendix A, table 4-9).

I share the concern expressed by many about possible adverse effects of herbicides. But considering the relatively small size of our herbicide program, our conservative analyses, and mitigations requiring least-risk herbicides to be applied at lowest effective rates by least-risk methods, I believe the herbicide program of **MODIFIED G** can be carried out without undue risk to human health or the environment.

Manual methods have by far the greatest frequency of accidents and pose the highest risk of serious injury or death (Final EIS volume I, table IV-8). MODIFIED G will protect worker safety better than alternatives D and E since it will rely less on manual methods.

### Aerial Application

Some people feel that aerial herbicide application increases risks to humans and the environment. However, aerial application actually reduces worker exposure to herbicides because only the mixer/loader comes in close contact with the chemical (Final EIS volume II, appendix A, page 5-36).

My decision is to allow use of this tool for some pine site preparation and utility transmission line maintenance, for about 6 percent of the projected herbicide program in MODIFIED G. It will be used mainly to treat remote sites with rugged terrain or very dense growth where other methods are ineffective or uneconomical.

Some people feel aerial application may cause herbicides to drift onto other ownerships. This is a legitimate concern, but with careful management and the use of advanced technology, the risk is very low. Our analysis shows that we now have the technology, such as improved nozzles producing large droplets, to avoid such problems. Drift and its effects are minimized by mitigations requiring an aerial operations plan, worker training and certification, application of large droplets in favorable weather and use of clearly-marked buffers to protect the public, other lands, plants, animals and water (Final EIS volume I, pages II-60 to II-64).

The highest risk of aerial herbicide application is to water quality when streams are overflowed (Final EIS volume I, page IV-93). But few streams should be affected, especially with the tighter controls imposed by mitigations requiring an aerial operations plan, clearly-marked buffers and aggressive spill cleanup. The risk will be a fraction of that in alternative G since the projected aerial program will be nearly two-thirds smaller in MODIFIED G. I recognize the minor risks involved, but our mitigations and careful management will hold them to an absolute minimum.

### Wildlife and Plant Diversity

People are concerned about potential effects on wildlife and their habitats and about loss of plant or animal species from certain sites. MODIFIED G will produce more overall diversity of wildlife habitats and plant communities than any other alternative. Alternatives A, B, C and E would favor more late successional species such as woody plants and gray squirrels by stressing low intensity treatments. Alternatives D, F and H would favor more early successional species such as herbaceous plants and mourning doves by stressing mechanical methods or higher intensity treatments. Alternative G would allow more broadcast herbicide use which adversely affects more species on a site. MODIFIED G will promote the most balanced mix of early, middle and late successional species and habitats by using the most balanced mix of low to moderate intensity tools.

Protection of threatened, endangered, proposed and sensitive species is critical. **MODIFIED G** will ensure their recovery by managing their habitat with a balanced mix of low to moderate intensity tools. Mitigations ensure that they will be protected from adverse effects of herbicides and other tools. A biological evaluation will also be made during site-specific analysis; the U.S. Fish and Wildlife Service and other appropriate agencies will be consulted before any project that might affect one of these species may proceed.

The Fish and Wildlife Service reviewed the Draft EIS and made valuable suggestions for change. They have concurred in writing that the provisions in alternative **MODIFIED G** would adequately address their concerns for threatened, endangered and proposed species (Final EIS volume III, letter 321a).

### Soil, Water and Air

People are concerned about potential erosion and loss of soil nutrients. They are also concerned about possible adverse effects on beneficial uses of water. Some believe that the season, frequency and intensity of prescribed fire must be controlled to protect soil, water and air quality.

Effects of **MODIFIED G** on soil and water will be minor due to its mix of low to moderate intensity tools and its mitigations. Only alternative C would have slightly less effect on soil productivity. Of alternatives implementing the full vegetation management program, only E would produce less sediment (Final EIS volume I, table II-8). Herbicide concentrations in perennial streams and ground water should never exceed a small fraction of EPA's strictest drinking water standard (Final EIS volume I, pages IV-93 to IV-97).

These minor effects result mostly from eliminating severe fire and intensive mechanical tools, by favoring short-lived, low-rate herbicides over mechanical site preparation and by using mitigations (especially buffers). Cumulative effects analysis shows that **MODIFIED G** will not significantly increase herbicide concentrations, stormflows and sediment loads when added to all other actions and processes in a watershed (Final EIS volume I, pages IV-100 to IV-106).

Effects of **MODIFIED G** on air quality will also be minor. Smoke and its effects on highways, airports, populated areas and Class I areas will be minimized by smoke management mitigations. Gases emitted by prescribed fire have minimal effect on human health. Cumulative effects analysis shows that **MODIFIED G** will not significantly affect regional air quality (Final EIS volume I, page IV-112).

### Costs and Employment

Some people want us to use low-cost methods. Of alternatives implementing the full vegetation management program, only E would cost slightly less initially (Final EIS volume I, table II-9), but it would require costly repeat treatments in many activities. **MODIFIED G** will allow more efficient production of resources like timber, wildlife and forage. Costs are important, but I am more concerned about our ability to protect human health and the environment and meet our resource goals. Alternatives D, E and H would provide slightly more employment, but **MODIFIED G** will provide as much as at present.

### Visual and Cultural Resources

Of alternatives implementing the full vegetation management program, only E would have measurably less effect on visual and cultural resources. It would use less herbicides that brown vegetation and less mechanical tools that can damage artifacts. But our mitigations requiring projects to be carefully timed and designed will keep these effects to a minimum in **MODIFIED G** and reduce them from the present.

### Summary

**MODIFIED G** is preferable to alternatives A and B which would fail to meet Forest Plan goals or achieve recovery of some threatened and endangered species. At the other end of the spectrum, alternatives F and H would have more adverse effects on human health, soil, water, cultural resources and diversity of wildlife habitats and plant communities.

Alternative C, the environmentally preferable alternative, would not treat enough acres to fully meet our Forest Plan goals for wildlife, range and forest growth. It also does not protect the environment substantially better than **MODIFIED G**. Alternative D, which eliminates use of herbicides, lacks the range of tools of **MODIFIED G** to ensure that vegetation is treated effectively on our full array of sites. Alternatives C and D would also provide less diversity of wildlife habitats and plant communities than **MODIFIED G**.

Alternative E is environmentally sound due to its reliance on low-intensity tools. However, with many more acres treated with manual methods than in **MODIFIED G**, it would provide less effective vegetation control, require costly repeat treatments, provide less diversity of wildlife habitats and plant communities and expose our workers to much higher risks of accidental injury or death. Finally, **MODIFIED G** is preferable to alternative G mainly because it reduces the amount of herbicides applied by aerial and other broadcast methods.

**MODIFIED G** is the best choice for conducting our vegetation management program in the Coastal Plain/Piedmont. It offers great flexibility to meet our resource needs by using a full range of tools that reduce environmental impacts from the present. Its extensive mitigations allow us to achieve a greater variety of wildlife habitats and plant communities with a high degree of protection for human health and safety, plants, animals, soil, water and air.

## VI. IMPLEMENTATION

My decision will be implemented 30 days after EPA publishes the notice of availability for the Final EIS. Forest Plans for the Coastal Plain/Piedmont are being amended (exhibits B through J of this Record) to conform with my decision. I have determined that these amendments are not significant under NFMA planning regulations (36 CFR 219.10). Site-specific vegetation management projects must be done within constraints set by the amended Forest Plans with regard to methods and tools that are allowed, intensity and frequency of treatments that must be used, and mitigation measures (standards and guides) that must be applied.

I am asking the Chief of the Forest Service to lift his March 30, 1984 deferral on aerial herbicide application with respect to our vegetation management

program in the Coastal Plain/Piedmont. I am deciding now to allow aerial herbicide application, but herbicides may only be applied by other means until the Chief approves my decision. I will notify the public when he does.

Vegetation management projects must receive site-specific analysis to comply with NEPA. Project data will be gathered and evaluated by trained personnel familiar with local conditions. The detailed analysis will evaluate direct, indirect and cumulative environmental effects for the area. The Final EIS for vegetation management may be tiered to (40 CFR 1502.20 and 1508.28) and its information incorporated by reference (40 CFR 1502.21). Information must be available to the public before decisions are made or actions are taken. IPM principles will be used during project development. Project decisions are appealable pursuant to Forest Service appeal regulations.

Monitoring will be done during and after treatment to assure that projects are implemented as designed and mitigations are effective. Information gathered may be used to improve treatments or add further mitigations. A variety of treatments in diverse sites will be monitored. Minor projects and those whose effects are already well documented may not be monitored. Projects will be monitored within guidelines set by Forest Plans and Final EIS volume I, chapter II, section E.

Vegetation management methods may continue to change based on project monitoring, research and improvements in technology. For example, mineral oil is being studied as a possible replacement for kerosene and diesel oil as a herbicide additive. If it is shown to pose less risk to human and wildlife health, a supplement to the Final EIS will document that analysis. My intent then would be to replace kerosene and diesel oil with mineral oil whenever possible.

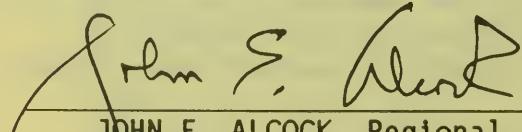
Analyses in the EIS may also be updated in the future. For example, a new study is underway to evaluate worker exposure to herbicides using current delivery systems and protective clothing requirements. Its results will be used to refine our estimates of herbicide exposure and health risks through a supplement to the Final EIS.

## VII. RIGHT TO ADMINISTRATIVE APPEAL

My decision is appealable pursuant to 36 CFR 217. Notices of appeal must be submitted within 90 days of the date below, in writing, to:

Chief, USDA Forest Service  
South Building  
12th and Independence Avenue SW  
Washington, DC 20250

A copy of the notice of appeal sent to the Chief must be submitted to me.

  
\_\_\_\_\_  
JOHN E. ALCOCK, Regional Forester  
USDA Forest Service  
1720 Peachtree Road, NW  
Atlanta, GA 30367

2/27/89

\_\_\_\_\_  
Date

## MANAGEMENT REQUIREMENTS AND MITIGATION MEASURES

This exhibit describes management requirements and mitigation measures required by this Record of Decision. Management requirements set direction on how resources are managed (such as timber stocking standards). Mitigation measures are actions taken to lessen adverse impacts or enhance beneficial effects (such as streamside protection).

### I. General Management Requirements and Mitigation Measures

The following general requirements and measures apply to all vegetation management methods. Each forest may be more restrictive, but not less.

#### A. Site-Specific Analysis

- (1) Projects must have site-specific analysis in compliance with the National Environmental Policy Act (NEPA). This environmental analysis considers site-specific techniques, intensity of application methods, and potential environmental effects of any method considered. A reasonable range of alternatives, including one which does not use herbicides and a "no action" alternative, is examined.

Potential direct, indirect, and cumulative effects are evaluated. Effects to be considered include long-term soil productivity, water quality, air quality, vegetation diversity, wildlife, fish, cultural resources, civil rights (including those of minorities and women), and threatened, endangered, proposed, and sensitive species.

- (2) A biological evaluation of how a project may affect any species Federally listed as threatened, endangered, or proposed, or identified by the Forest Service as sensitive, is done as part of the site-specific environmental analysis. This evaluation considers all available inventories of threatened, endangered, proposed, and sensitive species populations and their habitat for the proposed treatment area. When adequate population inventory information is unavailable, it must be collected when the site has high potential for occupancy by a threatened, endangered, proposed, or sensitive species. Appendix D identifies potential adverse effects from vegetation management by species. When adverse effects are projected, mitigation measures specified in appendix D and this chapter are used to prevent them.

Requirements and measures for actions affecting threatened, endangered, or proposed species are detailed in species recovery plans and FSH 2609.23R. Recovery plans have been prepared for the southern bald eagle, red-cockaded woodpecker, wood stork, Mississippi sandhill crane, gray bat, Indiana bat, eastern indigo snake, and Harpers beauty. Chapters in FSH 2609.23R have been prepared for red-cockaded woodpecker, southern bald eagle, Mississippi sandhill crane, and American alligator. Requirements and measures for actions affecting sensitive species are detailed in Forest Land and Resource Management Plans.

If it is determined that the project may positively or negatively affect threatened, endangered, or proposed species, consultation is initiated with the Fish and Wildlife Service. If, during informal consultation, it is determined that the project is not likely to adversely affect listed species and the Fish and Wildlife Service so concurs in writing, consultation is terminated. However, if it is determined that the project is likely to adversely affect listed species, formal consultation is initiated. Figure D-1 (appendix D, Final EIS) outlines this process.

When the evaluation indicates that a project may have an adverse effect on a sensitive species or its habitat, appropriate State wildlife agencies, natural heritage commissions, and other cooperators or species authorities are contacted to identify coordination measures. These measures are directed towards ensuring species viability and preventing negative population trends that would result in Federal listing.

- (3) Integrated Pest Management (IPM) principles are used during site-specific analysis. IPM is a decision-making and action process which includes biological, economic, and environmental evaluation of pest-host systems to manage pest populations.

IPM strategies apply a comprehensive systems approach to silvicultural, wildlife, range, recreation and corridor management practices that emphasizes prevention of pest problems. These strategies consist of a range of practices that include prescribed fire, manual, mechanical, biological, and chemical tools that may be used alone or in combination. Risk rating systems and pest incidence surveys are used during site-specific analysis. Further IPM direction is provided in FSM 3400, FSH 3409.11, and Forest Land and Resource Management Plans.

- (4) In each project, water quality is protected from nonpoint-source pollution through use of preventive "best management practices" (BMP's). Implementation of BMP's, monitoring and evaluation of their application and effectiveness, and adjustment of practices as needed are done to protect beneficial water uses and comply with State water quality laws. BMP's are applied to all activities. In each project, site-specific conditions must be assessed, and the BMP's needed to meet State water quality standards must be employed.

#### B. Timber Stand Improvement (TSI)

- (5) Methods that maintain stocking levels (stems per acre) and improve growth rates are used (table II-2).

**Table II-2.--\*Southern Region restocking standards: number of desirable stems per acre.**

Forest Type	Lower Level	Target Level	Upper Level
Loblolly pine	300	500-700	900
Shortleaf pine	300	500-700	900
Slash pine	300	500-700	900
Longleaf pine	400	600-900	1,200
White pine	150	250-350	500
Virginia pine	300	500-700	900
Sand pine	300	500-700	900
Mixed pine-hardwood	300	400-600	900
Hardwoods (all species)	150	250-350	500

\* Stocking levels shown are guides, and must be used in conjunction with professional judgment to determine restocking levels for a specific site.

- (6) Pine stands receive release and weeding necessary to meet growth rates and stocking levels established in Forest Land and Resource Management Plans. Stands are considered for release when the desired seedlings are not free to grow, when competing growth threatens to overtop and compete directly for sunlight, moisture, and nutrients, or when competition results in less-than-average growth for comparable sites.
- (7) Precommercial thinning of pine (usually done before age 10 to 15 years) is considered when stem density exceeds the upper level of restocking standards.
- (8) Hardwood stands are generally not released. Clumps of competing stems are removed, however, where they may interfere with desired trees.
- (9) Hardwood stands, where codominant trees of seedling (not sprout) origin are 25 feet or taller, are considered for precommercial thinning.

#### C. Soil, Water, and Aquatic Life

- (10) Channel stability of perennial and intermittent streams is protected by retaining all woody understory vegetation within at least 5 feet of the bank and by keeping slash accumulations out of the stream.

#### D. Cultural Resources

- (11) A cultural resource inventory is conducted when soil disturbing activities are planned. An archaeologist performs a field survey to determine significance of and protection required for cultural resource sites. Significant sites are evaluated for eligibility to the National Register of Historic Places and are submitted to the State Historic Preservation Office for review.
- (12) If archaeological or historic resources are encountered during soil disturbing activities, work stops until an archaeologist evaluates the site's significance.

## E. Safety

(13) Safety equipment for Forest Service workers (such as hard hats, eye and ear protection, chaps, and fire retardant clothes) is worn as determined by a Job Hazard Analysis specified in the Health and Safety Code Handbook (FSH 6709.11). This analysis estimates risks to specific body parts and prescribes needed protection.

## F. Visual Quality

(14) Visual Quality Objectives (VQO's) are met by corridor maintenance, site preparation, timber stand and wildlife habitat improvement, range forage, and fuels treatment projects. (VQO's are Preservation, Retention, Partial Retention, Modification, and Maximum Modification which describe the visibility of forestry activities to an observer. Descriptions are found in the EIS.)

(15) Treatments are scheduled as much as possible for the season that best meets VQO's. Rehabilitation and enhancement work may be needed to meet short-term VQO's. Visual diversity along active travelways (such as canopy layering, flowering trees) is protected from treatments where feasible and needed to meet VQO's. Tool selection and coordination requirements are determined by a site-specific analysis at the project level.

## G. Wildlife

(16) Wildlife stand improvement (WSI) seeks to improve vegetation species composition in timber stands and to develop wildlife habitat areas for game and nongame species. A variety of woody and herbaceous species suited to site conditions and burning regime are maintained to assure year-round quality habitat. Exceptions that may reduce plant species variety include treatments to improve habitat for species such as red-cockaded woodpeckers.

(17) For understory species WSI, proper management allows full sunlight on 30 percent of the forest floor. For hardwood overstory WSI, thinning encourages full crown development, vigorous growth, and soft or hard mast production. When thinning stands older than 30 years, stems are favored which show positive indication of bearing soft- or hard-mast.

(18) During TSI, WSI, and site preparation, selected groups of overstory and understory vegetation are protected and managed to assure a variety of soft-mast, hard-mast, and cover species. During site preparation, active and potential den trees are retained in clumps (at least 1/2 acre per 20 acres) if they are not provided in adjacent stands not suitable for timber production, inclusions, or streamside management zones. During TSI and WSI, all recognized den trees are protected. In addition, during TSI, WSI, and site preparation, an average of at least 2 standing dead snags are retained per acre, in the form of large hardwood trees (greater than 12 inches) when possible. Appropriate treatments are used to create snags where natural snags are lacking.

## H. Corridors

- (19) Each forest works with utility special-use permittees to establish vegetation management objectives (such as wildlife, watershed, recreation, visual quality) for location of new utility lines and maintenance of existing ones. These objectives determine maintenance techniques and strategies.
- (20) Where feasible, low-growing shrubs and grasses are established and maintained along utility lines where wildlife and aesthetic objectives are dominant.
- (21) Permanent vegetation is established and maintained on intermittent service roads when they are closed and on cut and fill slopes of all roads.
- (22) Where practical, native flowering species are established, maintained, and enhanced on intermittent service roads when they are closed and on cut and fill slopes of all roads.
- (23) Vegetation along trails is treated to maintenance levels identified in the publication "Trails South." Priority is given to correcting unsafe conditions, preventing resource damage, and providing for intended recreation experience level.

## I. Range Forage

- (24) When managing for range forage species, wildlife and livestock use should not exceed 50 percent of current annual growth of key grass species, 20 percent of total annual production of key forb species, and 20 percent of current annual growth of key shrub species.

## J. Review and Reporting Requirements

- (25) Each national forest and grassland must include vegetation management in its management review process. Forest Supervisors must conduct periodic vegetation management activity reviews. At a minimum, reviews must evaluate adequacy of vegetation management mitigations and monitoring.
- (26) Using existing reporting systems, each national forest and grassland must report implementation of its vegetation management program annually. Every five years, at most, Regional Office staff must assess these reports to be sure that the vegetation management program in the Coastal Plain/Piedmont approximates the acreage distribution of methods and tools estimated for alternative MODIFIED G.

## II. Method-Specific Management Requirements and Mitigation Measures

These requirements and measures are in addition to general requirements and measures in the preceding section. Each forest may be more restrictive, but not less.

### A. Prescribed Fire

#### 1. Site Specific Planning

(27) Site-specific planning for all prescribed burns is done by trained resource specialists and approved by the appropriate Forest Service line officer prior to project implementation. This planning includes description of treatment area, burn objectives, weather factors and fuel moisture conditions, and resource coordination requirements. Coordination requirements include provisions for public and worker safety, burn day notification of appropriate agencies and persons, smoke management to comply with air quality regulations and protect visibility in Class I areas, protection of sensitive features, as well as fireline placement, specific firing patterns, ignition methods, and mop-up and patrol procedures. A post-burn evaluation compares treatment results with plan objectives.

## 2. Vegetation Protection

(28) Prescribed fires in loblolly, shortleaf, slash, and sand pine stands are not done until pines are 10 to 15 feet tall or 3 to 4 inches in diameter at ground level. In longleaf pine stands, burns can be used prior to height growth for brownspot disease control when root collars of grass stage seedlings are at least 0.3 to 0.5 inch in diameter. After height growth begins, burns can be used once seedlings are 3 to 5 feet tall.

## 3. Soil and Water Protection

(29) Slash burns are done so they do not consume all litter and duff and alter structure and color of mineral soil on more than 20 percent of the area. Steps taken to limit soil heating include use of backing fires on steep slopes, scattering slash piles, and burning heavy fuel pockets separately.

(30) On severely eroded forest soils, any area with an average litter-duff depth of less than 1/2 inch is not burned.

(31) Growing season underburns are not allowed on the same site more than twice in succession without an intervening dormant season burn.

(32) Where needed to prevent erosion, water diversions are installed on firelines during their construction, and the firelines are revegetated promptly after the burn.

(33) Firelines which expose mineral soil are not located in filter strips along lakes, perennial or intermittent springs and streams, wetlands, or water-source seeps, unless tying into lakes, streams or wetlands as firebreaks at designated points with minimal soil disturbance. Low-intensity fires with less than 2-foot flame lengths may be allowed to back into the strip along water bodies, as long as they do not kill trees and shrubs that shade the stream. The strip's width in feet is at least 30 plus 1.5 times the percent slope.

## 4. Wetland Protection

(34) When wetlands need to be protected from fire, firelines are plowed around them only when the water table is so low that the prescribed fire might otherwise damage wetland vegetation or organic matter. Previous firelines are reused as much as possible.

(35) If a fireline is required next to a wetland, it is not plowed in the transition zone between upland and wetland vegetation except to tie into a natural firebreak.

(36) Plowed firelines are not located within savannahs except when needed to protect facilities or threatened, endangered, proposed, or sensitive species.

## 5. Air Quality Protection

(37) The best available technology to control smoke emissions is used, including accelerated mop-up, rapid ignition techniques, and burning when moisture conditions limit total smoke production. Burning is not done during stagnant weather nor when predictions indicate that smoke drift into highways, airports, populated areas, or other sensitive areas may be hazardous.

## 6. Wildlife and Habitat Protection

(38) Oak, oak-gum-cypress, and oak-pine stands and inclusions are protected by excluding fire or by using low-intensity backing fires.

(39) Generally, understory burns are not scheduled during nesting season to avoid disrupting reproductive activities. Forest managers may, however, use burns to meet specific objectives, such as protecting threatened and endangered species (e.g., red-cockaded woodpecker), reestablishing natural ecosystems, controlling brownspot disease and promoting longleaf height growth, and site preparation. Burns are planned and executed to avoid damage to habitat of any threatened, endangered, proposed, or sensitive species (such as destruction of bald eagle nest trees).

(40) Burns are planned to achieve their most desirable distribution for wildlife habitat and to try to break up large, continuous fuel types. When consistent with burning objectives, burns are done to create a mosaic pattern of fuel types that complements fuel treatment and wildlife objectives.

## 7. General Resource Protection

(41) Critical values of the Keetch-Byram Drought Code (Cumulative Severity Index) are developed for all major vegetation-soil-landform types on which prescribed fires are conducted. Burning is allowed only on days when the Drought Code is less than this critical value.

## 8. Safety

(42) Prescribed fires are conducted under the direct supervision of a burning boss with fire behavior expertise consistent with the project's complexity. All workers must meet health, age, physical and training requirements in FSM 5140, and use protective clothing and equipment.

## B. Mechanical Method

### 1. Soil and Water Protection

- (43) Prompt revegetation is done if treatments leave insufficient ground cover to control erosion by the end of the first growing season.
- (44) Only mowing, chopping, shearing, ripping, and scarifying are used on sustained slopes over 15 percent. No mechanical equipment is used on sustained slopes over 35 percent.
- (45) Mechanical site preparation is not done on sustained slopes over 20 percent with erodible or failure-prone soils.
- (46) To limit soil compaction, no mechanical equipment is used on plastic soils when the water table is within 12 inches of the surface, or when soil moisture exceeds the plastic limit. Soil moisture exceeds the plastic limit if the soil can be rolled to pencil size without breaking or crumbling.
- (47) Mechanical equipment is operated so that furrows and soil indentations are aligned on the contour (with grades under 5 percent).
- (48) Bedding is done only on level, wet sites, and only when needed to ensure survival and growth of managed trees. Beds must have an initial height no greater than 15 inches and blend with the natural landform.
- (49) Windrows and piles are spaced no more than 200 feet apart to limit soil exposure, soil compaction, and nutrient loss from piling and raking. Windrows are aligned on the contour.
- (50) When piling, at least 80 percent of the area must retain some ground cover of litter and duff, and soil must not be displaced by piling rakes.
- (51) Mechanical equipment is not allowed in any defined stream channel except to cross at designated points, and may not expose more than 10 percent mineral soil in filter strips along lakes, perennial or intermittent springs and streams, wetlands, or water-source seeps. The strip's width in feet is at least 30 plus 1.5 times the percent slope. Soil and debris are not deposited in lakes, streams, wetlands, springs, or seeps.

## 2. Corridors

- (52) All trails, roads, ditches, and other improvements in the project area are kept free of logs, slash, and debris. Any road, trail, ditch, or other improvement damaged by operations is promptly repaired.

## 3. Safety

- (53) Forest Service equipment operators must demonstrate proficiency with the equipment and be licensed to operate it. A helper must direct the operator where safety is compromised by terrain or limited sight distance.

## C. Herbicide Method

### 1. Labeling

- (54) Herbicides are applied according to labeling information and the site-specific analysis done for projects. This labeling and analysis are

used to choose the herbicide, rate, and application method for the site. They are also used to select measures to protect human and wildlife health, non-target vegetation, water, soil, and threatened, endangered, proposed, and sensitive species. Site conditions may require stricter constraints than those on the label, but labeling standards are never relaxed.

## 2. Choice of Herbicide

(55) Only herbicide formulations (active and inert ingredients) and additives registered by EPA and approved by the Forest Service are applied.

(56) Herbicides and application methods are chosen to minimize risk to human and wildlife health and the environment. The following criteria apply to information in table II-1 (p. II-42 in the final EIS):

Class A herbicide/method combinations are first choice.

Class B combinations are used only if no Class A herbicide can meet project objectives, and then only if adverse effects are mitigated to acceptable levels.

Class C combinations are used only if no Class A or B herbicide can meet project objectives, and then only if adverse effects are mitigated to acceptable levels.

Class D combinations are never used.

NOTE: The Regional Forester has, in this Record of Decision, strengthened this mitigation as follows: No Class B or C chemical may be used on any project, except with Regional Forester approval. Approval will be granted only if a site-specific analysis shows that no other treatment would be effective and that all adverse health and environmental effects will be fully mitigated.

## 3. Application Rate

(57) Herbicides are applied at the lowest rate effective in meeting project objectives and according to guidelines for protecting human (NRC 1983) and wildlife health (EPA 1986a). Application rate and work time must not exceed typical levels (appendix A, tables 4-4 to 4-6) unless a supplementary risk assessment shows that proposed rates do not increase risk to human or wildlife health or the environment beyond standards discussed in Chapter IV. Typical application rates (1b/ac) of active ingredient are:

	2,4-D/a	2,4-D/e	2,4-DP	DICAMBA	FOSAMINE	GLYPHOS	HEXAZ	IMAZAPYR
AL	2.0	2.5	3.0		10.0	1.5	1.5	0.75
AG							1.7	
ML	2.5	4.0	4.0	2.0	7.8	1.5	1.7	0.75
MG							1.7	
HG							1.7	
HF	2.0	2.0	1.0	2.0		1.0	1.7	0.75
HB		1.7	1.2					
HS							0.5	
HC	2.0			1.5		1.3		0.75

	FUEL OIL	LIMONENE	PICLORAM	SULFOMET	TEBUT	TRICLOPYR/a	TRICLOPYR/e
AL	0.5	0.9	0.5	0.13	1.0	3.0	4.0
AG					1.0		
ML	2.0	0.9	0.7	0.17	1.0	4.0	4.0
MG					1.0		
HG							
HF	1.5	0.9	0.4	0.06	4.0	1.4	1.0
HB	1.0	0.9					1.9
HS					4.0		
HC			0.3			1.0	

KEY: AL = aerial liquid treatment  
 AG = aerial granular treatment  
 ML = mechanical liquid treatment  
 MG = mechanical granular treatment  
 HG = manual (hand) granular treatment  
 HF = manual foliar broadcast treatment  
 HB = manual basal treatment  
 HS = manual soil-spot treatment  
 HC = manual cut-surface treatment

GLYPHOS = glyphosate  
 HEXAZ = hexazinone  
 SULFOMET = sulfometuron methyl  
 TEBUT = tebuthiuron  
 /a = amine formulation  
 /e = ester formulation

#### 4. Application Method

(58) Method and timing of application are chosen to achieve project objectives while minimizing effects on non-target vegetation and other environmental elements. Selective treatment is preferred over broadcast treatment. Public safety during such uses as viewing, hiking, berry picking, and fuelwood gathering is a priority concern. Application methods from most to least selective are:

- (a) Cut surface treatments
- (b) Basal stem treatments
- (c) Directed foliar treatments
- (d) Soil spot (spot around) treatments
- (e) Soil spot (spot grid) treatments
- (f) Manual granular treatments
- (g) Manual/mechanical broadcast treatments
- (h) Helicopter treatments

## 5. Prescribed Burning of Treated Areas

(59) Areas are not prescribed burned for at least 30 days after herbicide treatment.

## 6. Drift Control

(60) Weather is monitored and the project is suspended if temperature, humidity, or wind become unfavorable as follows:

	<u>Temperatures Higher Than</u>	<u>Humidity Less Than</u>	<u>Wind (at Target)</u> <u>Greater Than</u>
<b>Ground:</b>			
Hand (cut surface)	N.A.	N.A.	N.A.
Hand (other)	98F	20%	15 mph
Mechanical (liquid)	95F	30%	10 mph
Mechanical (granular)	N.A.	N.A.	10 mph
<b>Aerial:</b> Liquid			
	90F	50%	5 mph
Granular	N.A.	N.A.	8 mph

(61) Nozzles that produce large droplets or streams of herbicide are used. Nozzles that produce fine droplets are used only for hand treatment where distance from nozzle to target does not exceed 8 feet.

## 7. Supervision and Training

(62) A certified pesticide applicator supervises each Forest Service application crew and trains crew members in personal safety, proper handling and application of herbicides, and proper disposal of empty containers.

(63) Each Contracting Officer's Representative (COR), who must ensure compliance on contracted herbicide projects, is a certified pesticide applicator. Contract inspectors are trained in herbicide use, handling, and application.

## 8. Protection of Workers

(64) Forest Service workers who handle herbicides must wear a long-sleeved shirt and long pants made of tightly woven cloth that must be cleaned daily. They must wear a hard hat with plastic liner, waterproofed boots and gloves, and other safety clothing and equipment required by labeling. They must bring a change of clothes to the field in case their clothes become contaminated.

(65) Each Forest Service crew must take soap, wash water separate from drinking water, eyewash bottles, and first aid equipment to the field.

(66) Contractors ensure that their workers use proper protective clothing and safety equipment required by labeling for the herbicide and application method.

- (67) Workers must not walk through areas treated by broadcast foliar methods on the day of application.
- (68) Supervisors must ensure that monitoring is adequate to prevent adverse health effects. Workers displaying unusual sensitivity to the herbicide in use are medically evaluated and, if tested as sensitive to the herbicide in use, are reassigned to other activities.

#### 9. Protection of the General Public and Private Land

- (69) Notice signs (FSH 7109.11) are clearly posted, with special care taken in areas of anticipated visitor use. People living within one-fourth mile of an area to be treated aerially are notified during project planning and shortly before treatment.
- (70) No herbicide is broadcast within 100 feet of private land or 300 feet of a private residence, unless the landowner agrees to closer treatment. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

#### 10. Protection of Non-Target Vegetation

- (71) No soil-active herbicide is applied within 30 feet of the drip line of non-target vegetation (e.g., den trees, hardwood inclusions, adjacent stands) within or next to the treated area. Side pruning is allowed, but movement of herbicide to the root systems of non-target plants must be avoided. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

#### 11. Protection of Threatened, Endangered, Proposed, and Sensitive Species

- (72) 2,4-D, 2,4-DP, and triclopyr are not aerially applied within 300 feet, nor ground-applied within 60 feet, of occupied gray or Indiana bat habitat. The same buffers are used with 2,4-D and 2,4-DP around habitat of the endangered Florida scrub jay, and with 2,4-D around habitat of these sensitive animals: star-nosed mole, Florida mouse, old-field mouse, masked shrew, southeastern shrew, southern pygmy shrew, long-tail shrew, southern water shrew, southern rock vole, and red-backed vole. The same buffers are used with any formulation containing kerosene or diesel oil around habitat of any threatened, endangered, proposed, or sensitive bird during its nesting season. Buffers are clearly marked before treatment so applicators can easily see and avoid them.
- (73) No herbicide is aerially applied within 300 feet, nor ground-applied within 60 feet, of any threatened, endangered, proposed, or sensitive plant. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

#### 12. Protection of Water and Soil

- (74) Application equipment, empty herbicide containers, clothes worn during treatment, and skin are not cleaned in open water or wells. Mixing and cleaning water must come from a public water supply and be transported in separate labeled containers.

- (75) Aquifers and public water sources are identified and protected. States are consulted to ensure compliance with their ground water protection strategies.
- (76) No herbicide is broadcast on rock outcrops or sinkholes. No soil-active herbicide with a half-life longer than 3 months is broadcast on slopes over 45 percent, erodible soils, or aquifer recharge zones. Such areas are clearly marked before treatment so applicators can easily see and avoid them.
- (77) No herbicide is aerially applied within 100 horizontal feet, nor ground-applied within 30 horizontal feet, of lakes, wetlands, or perennial or intermittent springs and streams. No herbicide is applied within 100 horizontal feet of any public or domestic water source. Selective treatments (which require added site-specific analysis and use of aquatic-labeled herbicides) may occur within these buffers only to prevent significant environmental damage such as noxious weed infestations. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

#### 13. Aerial Application Operations Plan

- (78) Each aerial herbicide application project must have an operations plan approved by the forest's air safety officer who must ensure that: (a) adequate precautions are taken to protect the crew, including equipment certification and hazard identification; (b) areas to be aerially treated are clearly marked; and (c) methods used to avoid buffers and other sensitive areas are safe and effective.

#### 14. Control of Spills

- (79) During transport, herbicides, additives, and application equipment are secured to prevent tipping or excess jarring and are carried in a part of the vehicle totally isolated from people, food, clothing, and livestock feed.
- (80) Only the amount of herbicide needed for the day's use is brought to the site. At day's end, all leftover herbicide is returned to storage.
- (81) Herbicide mixing, loading, or cleaning areas in the field are not located within 200 feet of private land, open water or wells, or other sensitive areas.
- (82) During use, equipment to store, transport, mix, or apply herbicides is inspected daily for leaks.
- (83) Containers are reused only for their designated purpose. Empty herbicide containers are disposed of according to 40 CFR 165.9 Group I & II Containers.
- (84) Accident preplanning is done in each site-specific analysis. Emergency spill plans (FSM 2109.12, chapter 30) are prepared. In the unlikely event of a spill, the spill is quickly contained and cleaned up, and appropriate agencies and persons are promptly notified.

D. Manual Method

(85) Chain saw operators must be periodically certified and demonstrate proficiency with chain saws.

(86) Forest Service workers must comply with dress and safety standards specified in the Health and Safety Code Handbook (FSH 6709.11).

NATIONAL FORESTS IN ALABAMA  
LAND AND RESOURCE MANAGEMENT PLAN

Amendment #2  
January 1989

This amendment incorporates the methods and tools available for use in the Final EIS on vegetation management in the Coastal Plain/Piedmont. Biological methods are not allowed. All tools specified for prescribed fire, herbicide, and manual methods are available for use. For mechanical methods, all tools are available except raking and heavy disking.

CHAPTER IV. FOREST-WIDE STANDARDS AND GUIDELINES

Page IV-4

Item 1, Recreation Add: under Standard and Guideline (S&G) g the following items from the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont, (ROD/VMCP/P), Exhibit A: Items (14) and (15).

Page IV-7

Item 3, Cultural Resources Add: under S&G e the following item from the ROD/VMCP/P, Exhibit A: Item (12).

Page IV-8

Item 4, Wildlife Add: after S&G c the following items from the ROD/VMCP/P, Exhibit A: Items (2), (16), (17), (18), (38), (39), (40), (71), (72), and (73).

Page IV-9

Item 5, Soil and Water Add: under "The following standards and guidelines applicable to land disturbing activities, except permanent road construction", after S&G g the following items from the ROD/VMCP/P, Exhibit A: Items (29), (30), (32), and (33) except for the last sentence in (33).

Page IV-10

Item 5, Soil and Water Add: under "The following standards and guidelines are applicable to the management of riparian areas," under S&G b(1) the following item from the ROD/VMCP/P, Exhibit A: Item (10).

Item 5, Soil and Water Add: under "The following standards and guidelines are applicable to the management of riparian areas," under S&G c the following items from the ROD/VMCP/P, Exhibit A: Items (74), (75), (76), and (77).

Item 5, Soil and Water Add: under "The following standards and guidelines are applicable to the management of riparian areas," after S&G e the following items from the ROD/VMCP/P, Exhibit A: Items (34), (35), and (36).

Page IV-13

Item 7, Air Add: under S&G c the following item from the ROD/VMCP/P, Exhibit A: Item (37).

Page IV-15

Item 9, Fire Management Add: under S&G d the following item from the ROD/VMCP/P, Exhibit A: Items (27), (41), and (42).

Delete: the first sentence in S&F f, "Prescribed burning will be done only in upland pine stands over 10 years old, except for site preparation burns and those for control of brownspot disease in longleaf pine seedlings."

Add: to S&G f the following item from the ROD/VMCP/P, Exhibit A: Item (28).

Page IV-17

Item 12, Integrated Pest Management Add: after S&G d the following items from the ROD/VMCP/P, Exhibit A: Items (25), (26), (54), (55), (56), (57), (58), (59), (60), (61), (62), (63), (64), (65), (66), (67), (68), (69), (70), (78), (79), (80), (81), (82), (83), and (84).

Add: new item 15, Safety, after item 14.

Add: under new item 15 Safety the following items from the ROD/VMCP/P, Exhibit A: Items (13), (53), (85), and (86).

Add: new item 16, Site-Specific Analysis after item 15.

Add: under new item 16, Site specific Analysis the following items from the ROD/VMCP/P Exhibit A: Items (1), (3), and (4).

#### Chapter IV, MANAGEMENT AREA 6 - STANDARDS AND GUIDELINES

Page IV-74

Add: after S&G 40 the following items from the ROD/VMCP/P, Exhibit A: Items (44), (45), (46), (51) and (52), except for the second sentence in item (51).

Add: after S&G 41 the following items from the ROD/VMCP/P, Exhibit A: Item (6), (7), (8), and (9).

#### Chapter IV, MANAGEMENT AREA 13 - Standards and Guidelines

Page IV-93

Add: After S&G 22 the following items from the ROD/VMCP/P, Exhibit A: Items (19), (20), (21), and (22).

#### Chapter IV, MANAGEMENT AREA 16 - Standards and Guidelines

Page IV-111

Add: under S&G 28 the following item from the ROD/VMCP/P, Exhibit A: Item (24).

Add: after S&G 41 the following items from the ROD/VMCP/P, Exhibit A: Items (44), (46), (47), (48), (49), (50), (51), and (52) except for the second sentence in item (51).

Page IV-112

Add: after S&G 49 the following items from the ROD/VMCP/P, Exhibit A: Items (6), (7), (8), and (9).

#### Chapter IV, MANAGEMENT AREA 17 - Standards and Guidelines

Page IV-113

Add: after S&G 3 the following items from the ROD/VMCP/P, Exhibit A: Items (44), (45), (46), (48), (49), (50), (51), and (52), except for the second sentence in item (51).

#### Chapter IV, MANAGEMENT AREA 18 - Standards and Guidelines

Page IV-114

Add: after S&G 8 the following items from the ROD/VMCP/P, Exhibit A: Items (44), (45), (46), (48), (49), (50), (51), and (52) except for the second sentence in item (51).

#### Appendix I, STREAMSIDE MANAGEMENT ZONE STANDARDS FOR THE NATIONAL FORESTS IN ALABAMA

Page I-2 B. Activities Within Streamside Management Zones of Perennial and Intermittent Streams Add: under the column "To Be Avoided" edited item (10) from the ROD/VMCP/P, Exhibit A: "Retain all woody understory vegetation within 5 feet of the bank and keep slash accumulations out of the stream."

Items (5), (11), (23), and (43) from the ROD/VMCP/P, Exhibit A are already covered in the Forest Plan. Item (31) does not apply to the National Forests in Alabama.

This amendment is not a significant change in the National Forests in Alabama LRMP. The determination that this is a nonsignificant amendment is made in accordance with 36 CFR 219.10(f) and Chapter 1920 Forest Service Manual (53 Fed. Reg. 26807; July 15, 1988). This amendment does not alter the multiple-use goals and objectives for long-term land and resource management. This amendment adds more specific direction and standards and guidelines for vegetation management. The amendment does not involve an increase or decrease in resource demands. In summary, this direction for vegetation management does not alter the long-term relationship between levels of multiple-use goods and services projected by the LRMP.

The NEPA analysis for this change of direction has been documented in the Draft and Final EIS for Vegetation Management in the Coastal Plain/Piedmont. The EIS is available for review at the Forest Supervisor's office.



CHATTAHOOCHEE/OCONEE NATIONAL FOREST  
LAND AND RESOURCE MANAGEMENT PLAN

Amendment #6  
January 1989

This amendment incorporates the methods and tools available in the Final EIS on vegetation management in the Coastal Plain/Piedmont. Biological methods are not allowed. All tools specified for prescribed fire, herbicide, and manual methods are available for use. For mechanical methods, all tools are available except raking and heavy disking.

Chapter 4. Forest-wide Standards and Guidelines

Page 4-25. Add a section after the paragraph that reads, "Standards and guidelines found in this chapter indicate the appropriate harvest cutting methods to be used for the various management areas."

Add the following section:

\*\*\* Start of section to insert \*\*\*

2. For vegetation management, include the following management requirements and mitigation measures from the Record of Decision for vegetation management in the Coastal Plain/Piedmont (ROD - Vegetation Management), Exhibit A, as general direction and standards and guidelines, as seen in Appendix M of this Forest Plan.

I. General Management Requirements and Mitigation Measures: 1-3, 10, 13, 16-26

II. Method-Specific Management Requirements and Mitigation Measures: 27-35, 37-42, 46, 53-86

These management requirements are either additions or expand on those presently in the Forest Plan.

Management requirements and mitigation measures 4-9, 11-12, 14-15, 43-45, and 47-52 are already covered in the Forest Plan. The management requirement and mitigation measure 36 does not apply.

\*\*\* End of section to insert \*\*\*

This amendment is not a significant change in the Chattahoochee/Oconee LRMP. The determination that this is a nonsignificant amendment is made in accordance with 36 CFR 219.10 (f) and Forest Service Manual Chapter 1920 (53 Fed. Reg. 26807, July 15, 1988). This amendment does not alter the

multiple-use goals and objectives for long-term land and resource management. This amendment adds more specific direction and standards and guidelines for vegetation management. The amendment does not involve an increase or decrease in resource demands. In summary, this direction for vegetation management does not alter the long-term relationship between levels of multiple-use goods and services projected by the LRMP.

The NEPA analysis for this change of direction has been documented in the Draft and Final EIS for vegetation management in the Coastal Plain/Piedmont. The EIS is available for review at the Forest Supervisor's office.

NATIONAL FORESTS IN FLORIDA  
LAND AND RESOURCE MANAGEMENT PLAN

Amendment #2  
January 1989

This amendment incorporates the methods and tools available for use in the Final EIS on Vegetation Management in the Coastal Plain/Piedmont. Biological methods are not allowed. All tools specified for prescribed fire, herbicide, and manual methods are available for use. For mechanical methods, all tools are available except raking and heavy disking.

Vegetation management will be included in the forest management review process (GMR's, Functional Assistance Trips, etc.). The Forest will periodically conduct vegetation management activity reviews. At a minimum reviews will evaluate the adequacy of vegetation management mitigations and monitoring. Using existing reporting systems, the forest will report implementation of the vegetation management program annually.

The following management requirements from the Record of Decision for Vegetation Management in the Coastal Plain (ROD-VMCP) are either additions to or expand on those presently in the Forest Plan.

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-4      B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices – Standards and Guidelines heading RECREATION, subheading Recreation Planning and Inventory. Insert the following requirements from the ROD-VMCP as paragraphs C and D. Change the remaining paragraph numbers under the subheading as needed:

1. General Management Requirements and Mitigation Measures:  
F. Visual Quality (14)-(15)

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-5      B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices – Standards and Guidelines, Recreation heading, Recreation Planning and Inventory subheading. Insert the following requirements from the ROD-VMCP as paragraph F.

- I. General Management Requirements and Mitigation Measures:  
D. Cultural Resources (12)

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-9      B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices – Standards and Guidelines, Recreation heading, Trail Construction, Reconstruction, and Maintenance subheading.

Insert the following requirements from the ROD-VMCP as a replacement for paragraph A.

1. General Management Requirements and Mitigation Measures:  
H. Corridors (23)

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-10      B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices – Standards and Guidelines, Wildlife and Fish heading, Surveys, Planning, Prescriptions, Monitoring, Cooperation, and Administration subheading.

Add the following requirements from the ROD-VMCP as new paragraphs F, G, and H.

1. General Management Requirements and Mitigation Measures:  
G. Wildlife (16)-(18)

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-16      B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices – Standards and Guidelines.  
Replace Figure 4-1 with the following table.

Table II-12--\*Southern Region and National Forests in Florida restocking standards: Number of desirable stems per acre.

Forest Type	Lower Level	Target Level	Upper Level
Loblolly pine	300	500-700	900
Slash pine	300	500-700	900
Longleaf pine	400	600-900	1,200
Sand Pine	300	600-700	900
Mixed pine-hardwood	300	400-600	900
Hardwoods (all species)	150	250-350	500

\*Stocking levels shown are guides, and must be used in conjunction with professional judgment to determine restocking levels for a specific site.

(This paragraph meets the requirements of 1. General Management Requirements and Mitigation Measures, B. Timber Stand Improvement (5) (Table II-2)).

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-17 B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices - Standards and Guidelines, Timber heading, Reforestation subheading.  
Insert the following requirements from the ROD-VMCP as subheadings 1 through 7 under paragraph F.

**II. Method-Specific Management Requirements and Mitigation Measures: B. Mechanical Method, 2. Soil and Water Protection (44)-(45), (47)-(50).**

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-16 B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices - Standards and Guidelines, Timber heading, Stand Improvement subheading.  
Insert the following requirements from the ROD-VMCP after the heading. Change the remaining paragraph letters as needed:

**1. General Management Requirements and Mitigation Measures:  
B. Timber Stand Improvement (6)-(9)**

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-19 B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices - Standards and Guidelines, Soil, Water, & Air heading, Inventory, Planning, Administration, and Management subheading.  
Insert the following requirements from the ROD-VMCP at the end of paragraph A.

**II. Method-Specific Management Requirements and Mitigation Measures: B. Mechanical Method, 2. Soil and Water Protection (43)**

Insert the following requirements from the ROD-VMCP as subheadings 1, 2, and 3 under paragraph C.

**II. Method-Specific Management Requirements and Mitigation Measures: B. Mechanical Method, 2. Soil and Water Protection (51), 2. Corridors (52), and 3. Safety (53)**

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-20 B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices - Standards and Guidelines, Soil, Water, and Air heading, Inventory, Planning, Administration, and Management subheading.  
Add the following paragraph as paragraph L.

Channel stability of perennial and intermittent streams is protected by retaining all woody understory vegetation within 35 feet of the bank of perennial streams and 5 feet of the bank of intermittent streams and by keeping slash accumulations out of the stream. Channel stability of perennial streams is further protected by allowing only selective cutting of overstory trees within 35 feet of the bank. Clearcutting of overstory trees is allowed adjacent to intermittent streams.

(The previous paragraph meets the requirements of 1. General Management Requirements and Mitigation Measures, C. Soil, Water, and Aquatic Life (10)).

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-24 B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices – Standards and Guidelines, Lands heading, Special Use Management subheading.  
Insert the following requirements from the ROD-VMCP as paragraph L.

1. General Management Requirements and Mitigation Measures:  
H. Corridors (19)–(20)

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-27 B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices – Standards and Guidelines, Facilities heading, add a new subheading "Intermittent Service Roads" after the last paragraph of the Collector and Local Road Construction/Reconstruction subheading.  
Insert the following requirements from the ROD-VMCP as paragraphs A and B.

1. General Management Requirements and Mitigation Measures:  
B. Corridors (21)–(22)

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-29 B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices – Standards and Guidelines, Protection heading, Fuel Management Treatment and Maintenance subheading.  
Insert the following requirements from the ROD-VMCP as a replacement for paragraph C.

II. Method-Specific Management Requirements and Mitigation Measures: A. Prescribed Fire, 1. Site Specific Planning (27).

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-29 B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices – Standards and Guidelines, Protection heading, Fuel Management Treatment and Maintenance subheading.  
Insert the following requirements from the ROD-VMCP as new paragraphs E through Q.

**II. Method-Specific Management Requirements and Mitigation Measures:** A. Prescribed Fire, 2. Vegetation Protection (28), 3. Soil and Water Protection (29)-(33), 4. Wetland Protection (34)-(36), 5. Air Quality Protection (37), 6. Wildlife and Habitat Protection (38)-(40), 7. General Resource Protection (41), and 8. Safety (42)

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-31 B. FORESTWIDE STANDARDS AND GUIDELINES, 2. Forestwide Management Practices - Standards and Guidelines. Add a General Administration heading after the last paragraph under the Protection heading. Add a Safety subheading. Include the following three paragraphs the following requirements from the ROD-VMCP as paragraphs A, B, and C.

**I. General Management Requirements and Mitigation Measures:**  
E. Safety (13)

**II. Method Specific Management Requirements and Mitigation Measures, E. Manual Method (85)-(86)**

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-31 B. FORESTWIDE STANDARDS AND GUIDELINES, 3. Supplemental Standards and Guidelines Information.  
Add this category.

**g. Use of Herbicides**

Page IV-53 B. FORESTWIDE STANDARDS AND GUIDELINES, 3. Supplemental Standards and Guidelines Information.  
Insert this heading on a new page after page IV-53.

#### **USE OF HERBICIDES**

Insert the following requirements from the ROD-VMCP below the above heading:

**II. Method-Specific Management Requirements and Mitigation Measures:** C. Herbicide Method, 1. Labeling (54), 2. Choice of Herbicide, (55)-(56), 3. Application Rate (57), 4. Application Method (58), 5. Prescribed Burning of Treated Areas (59), 6. Drift Control (60)-(61), 7. Supervision and Training (62)-(63), 8. Protection of Workers (64)-(68), 9. Protection of the General Public and Private Land (69)-(70), 10. Protection of Non-Target Vegetation (71), 11. Protection of Threatened, Endangered, Proposed, and Sensitive Species (72)-(73), 12. Protection of Water and Soil (74)-(77), 13. Aerial Application Operations Plan (78), and 14. Control of Spills (79)-(84)

Chapter IV: FOREST MANAGEMENT DIRECTION

Page IV-118 E. MANAGEMENT PRESCRIPTIONS, 2. Management Areas and Management Area Standards and Guidelines, Management Area 7, Management

Practices, Standards and Guidelines, Range heading, Range Resource Planning, Inventory, Administrative Management subheading.

Insert the following requirement from the ROD-VMCP as a replacement for paragraph C.

- 1. General Management Requirements and Mitigation Measures:**  
**I. Range Forage (24)**

Chapter IV: **FOREST MANAGEMENT DIRECTION**

Page IV-119 E. MANAGEMENT PRESCRIPTIONS, 2. Management Areas and Management Area Standards and Guidelines, Timber heading, Reforestation subheading.

Add the following sentence at the end of paragraph E.

(See Use of Herbicides in section 3 of this chapter).

Chapter V: **IMPLEMENTATION OF THE FOREST PLAN**

Page V-2 A. IMPLEMENTATION DIRECTION, 2. Environmental Analysis. Insert the following requirements from the ROD-VMCP after the last paragraph under the above heading.

- 1. General Management Requirements and Mitigation Measures:**  
**A. Site Specific Analysis (1)-(2)**

Insert the following paragraph after the above insertion.

Integrated Pest Management (IPM) principles are used during site-specific analysis. See the discussion of IPM strategies on pages IV-51 to IV-53. Further direction is provided in the Forest Service Manual (FSM 3400) and in the Forest Service Handbook (FSH 3409.11).

Insert the following requirements from the ROD-VMCP after the above paragraph.

- 1. General Management Requirements and Mitigation Measures:**  
**A. Site Specific Analysis (4)**

General Management Requirements and Mitigation Measures in the Record of Decision for the following are presently covered in the Forest Plan: A. Site Specific Analysis (3) (in Supplemental Standards and Guidelines Information on page IV-51), and D. Cultural Resources (11) (in Forestwide Management Practices on pages IV-4 through IV-7).

Method Specific Management Requirements and Mitigation Measures in the Record of Decision for the following are presently covered in the Forest Plan: B. Mechanical Method, 1. Soil and Water Protection (46) (in Forestwide Management Practices on pages IV-19, paragraph C).

This amendment is not a significant change in the Land and Resource Management Plan for the National Forests in Florida. The determination that this is a nonsignificant amendment is made in accordance with 36 CFR 219.10 (f) and Forest Service Manual Chapter 1920 (52 Federal Regulations 26807, July 15, 1988). This amendment does not alter the multiple use goals and objectives for long term land and resource management. This amendment adds more specific direction and standards and guidelines for vegetation management in the general forest area and wilderness. The amendment does not involve an increase or decrease in resource demands. In summary, this direction for vegetation management does not alter the long-term relationship between levels of multiple-use goods and services projected by the Land Resource Management Plan.

The NEPA analysis for this change of direction has been documented in the Draft and Final EIS for Vegetation Management in the Coastal Plain/Piedmont. The EIS is available for review at the Forest Supervisor's Office.



KISATCHIE NATIONAL FOREST  
LAND AND RESOURCE MANAGEMENT PLAN

Amendment #3  
January 1989

This amendment incorporates the methods and tools available for use in the Final EIS on Vegetation Management in the Coastal Plain/Piedmont. Biological methods are not allowed. All tools specified for prescribed fire, herbicide, and manual methods are available for use. For mechanical methods, all tools are available except raking and heavy disking.

Chapter 3. FOREST-WIDE MANAGEMENT REQUIREMENTS

Following Page III-53 Add the necessary pages to include Vegetation Management as a Management Practice/Activity with the following management requirements from the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont (ROD - Vegetation Management), Exhibit A, as General Direction and Standards and Guidelines.

- I. General Management Requirements and Mitigation Measures:  
A. Site Specific Analysis (1)-(4); C. Soil and Water (10); E. Safety (13); F. Visual Quality (14) and (15) (as it applies to corridors, wildlife habitat improvement, range forage, and fuels treatment); G. Wildlife (16)-(18); H. Corridors (19)-(23); I. Range Forage (24); and J. Review and Reporting Requirements (25) and (26).
- II. Method-Specific Management Requirements and Mitigation Measures: A. Prescribed Fire (27)-(35) and (37)-(42); B. Mechanical Method (43), (46), (47), (49), (50), (52), and (53); C. Herbicide Method (54)-(84); and D. Manual Method (85) and (86).

These management requirements are either additions or expand on those presently in the Forest Plan.

General Management Requirements and Mitigation Measures in the Record of Decision for the following are presently covered in the Forest Plan: B. Timber Stand Improvement (5)-(9), (in Forest-Wide Management Requirements on page III-27, and in General Direction and Standards and Guidelines on pages III-132 and III-133 for Management Areas 10, 11, 12, 13, 15, and 16); D. Cultural Resources (11) and (12), (in Forest-Wide Management Requirements on pages III-14 and 15); and F. Visual Quality (14) and (15), (for timber management activities in Forest-Wide Management Requirements on pages III-10, 11, 12, 13, 14, 15, and 16).

Method-Specific Management Requirements and Mitigation Measures in the Record of Decision for: A. Prescribed Fire (36), concerning savannahs, and B. Mechanical Methods (48) concerning bedding are not applicable to the Forest; b. Mechanical Methods (44), (45), and (51) are less restrictive than Standards and Guidelines presently in the Forest Plan on page III-131 for Management Areas 10, 11, 12, 13, 15, and 16, and page III-187 for Management Area 20.

This amendment is not a significant change in the Kisatchie LRMP. The determination that this a nonsignificant amendment is made in accordance with 36 CFR 219.10 (f) and Forest Service Manual Chapter 1920 (53 Fed. Reg., 26807, July 15, 1988). This amendment does not alter the multiple-use goals and objectives for long-term land and resource management. This amendment adds more specific direction and standards and guidelines for vegetation management. The amendment does not involve an increase or decrease in resource demands. In summary, this direction for vegetation management does not alter the long-term relationship between levels of multiple-use goods and services projected by the LRMP.

The NEPA analysis for this change of direction has been documented in the Draft and Final EIS for Vegetation Management in the Coastal Plain/Piedmont. The EIS is available for review at the Forest Supervisor's office.

NATIONAL FORESTS IN MISSISSIPPI  
LAND AND RESOURCE MANAGEMENT PLAN

Amendment #6  
January 1989

This amendment incorporates the methods and tools available for use in the Final EIS on vegetation management in the Coastal Plain/Piedmont. Biological methods are not allowed. All tools specified for prescribed fire, herbicide, and manual methods are available for use. For mechanical methods, all tools are available except raking and heavy disking.

The Forest will periodically conduct vegetation management activity reviews, which at a minimum must evaluate the adequacy of vegetation management mitigation and monitoring. Existing reporting systems will be used to report implementation of the vegetation management program annually.

Chapter 4 - FOREST-WIDE STANDARDS AND GUIDELINES

Page 4-2      Following the first paragraph after the above title insert item (1) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont in the section on GENERAL MANAGEMENT REQUIREMENTS AND MITIGATION MEASURES, SITE SPECIFIC ANALYSIS.

Page 4-5      Following the word "land" in the first sentence on the page insert item (11) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont. Delete the balance of the first sentence on page 4-5. Add item (12), and the intent paragraph at the end of the first paragraph on page 4-5.

**WILDLIFE  
RESPONSE TO FACETS-GENERAL DIRECTION**

At beginning of section insert item (16) and (17) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont.

Page 4-8      Delete the second paragraph in the Land and Resource Management Plan for the National Forests in Mississippi and insert item (18) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont.

Before title **TIMBER** add title **RANGE** and sub-title **GENERAL DIRECTION**, insert item (24) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont.

Page 4-11      Under **SOIL WATER AND AIR**, page 4-11 of the Land and Resource Management Plan for the National Forests in Mississippi replace item 1 with (49), and after item 4 at the top of the page

insert items (30), (31), (32), (33), (46), and (50) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont.

After the third paragraph insert item (42) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont.

Page 4-12 Insert items (19) and (20) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont following the next to last paragraph. Item (19) will start with "Works with...," and item (20) will be included with the last sentence deleted.

Page 4-14 Insert item (22) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont following the eighth paragraph.

Insert item (36) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont at the top of the page after "GENERAL DIRECTION."

Page 4-17 At the end of the section titled FIRE insert items (27) through (41) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont.

Chapter 4 - TIMBER RESOURCE SUMMARY  
TIMBER HARVEST METHODS AND VEGETATION MANAGEMENT PRACTICES

Page 4-38 Before the last sentence on the page, add item (7) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont.

Revise the third from last sentence on the page to read, "Precommercial thinning is a planned practice only in the yellow pine and slash pine working groups, and in hardwood stands, where codominant trees of seedling (not sprout) origin are 25 feet or taller it is considered. Precommercial thinning is expected to be needed on about 20% of the area regenerated artificially and virtually all of the naturally regenerated stands."

Page 4-39 Insert items (13), and (53) through (86) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont before table 4-10.

Page 4-43 After "VISUAL QUALITY OBJECTIVES" insert the first sentence of item (14) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont. Insert item (15) in a paragraph after item (14).

Chapter 4 - PRESCRIPTION FOR ANALYSIS AREA SUITABLE FOR TIMBER PRODUCTION  
SUITABLE 1

Page 4-116 In the restocking guidelines table delete the line for Longleaf and insert the line for Longleaf in the table in item (5) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont in the section on GENERAL MANAGEMENT REQUIREMENTS AND MITIGATION MEASURES, TIMBER STAND IMPROVEMENT (TSI). (Retain footnote 1).

Before the third paragraph from the bottom of the page, add management requirement (7) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont.

#### Chapter 4 - BILOXI MANAGEMENT AREA STANDARDS AND GUIDELINES

Page 4-125 Insert Item (48) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont in the section titled "MODERATE SLASH WORKING GROUP" after the first paragraph.

#### Chapter 4 - BLACK CREEK MANAGEMENT AREA STANDARDS AND GUIDELINES

Page 4-131 Insert Item (48) from Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/PIedmont in the section titled "MODERATE SLASH WORKING GROUP" after the first paragraph.

#### Chapter 5 - IMPLEMENTATION OF THE FOREST PLAN

Page 5-2 Following the second paragraph on this page insert items (2) through (4) from Exhibit A in the Record of Decision of Vegetation Management in the Coastal Plain/Piedmont in the section on GENERAL MANAGEMENT REQUIREMENTS AND MITIGATION MEASURES, SITE SPECIFIC ANALYSIS.

Appendix M MANAGEMENT GUIDELINES FOR LAKE AND STREAMSIDE AREAS MANAGEMENT (COORDINATING REQUIREMENTS) FOR LAKE AND STREAMSIDE FILTER STRIPS

General Modify Appendix M to retain the minimum width of filter strips and to incorporate the portion from item (51) in Exhibit A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont that states the width of the filter strip will be 30 feet plus 1.5 times the percent slope. Each will take precedence where it will designate the wider filter strip.

Page M-3&M-4 Under both perennial and intermittent streams, prohibited actions add the following: "Removal of any woody understory vegetation within five feet of the bank."

The following disposition was made of the Standards and Guidelines in Appendix A in the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont.

All Standards and Guidelines have been incorporated in the Land and Resource Management Plan for the National Forests in Mississippi except for the following items which were already covered:

Standards and Guidelines numbered 6, 8, 21, 23, 43, 44, 45, 47, and 52.

This amendment is not a significant change in the National Forests in Mississippi Land and Resource Management Plan. The determination that this is a nonsignificant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual, Chapter 1920 (53 Fed. Reg. 2680.7, July 15, 1988). This amendment does not alter the multiple-use goals and objectives for long-term land and resource management. This amendment adds more specific direction and standards and guidelines for vegetation management in the National Forests in Mississippi. The amendment does not involve an increase or decrease in resource demands. In summary, this direction for southern pine beetle suppression does not alter the long-term relationship between levels of multiple-use goods and services projected by the LRMP.

The NEPA analysis for this change of direction has been documented in the Draft and Final EIS for Vegetation Management in the Coastal Plain/Piedmont. The EIS is available for review at the Forest Supervisor's office.

CROATAN-UWHARRIE NATIONAL FOREST  
LAND AND RESOURCE MANAGEMENT PLAN

Amendment #3  
January 1989

This amendment incorporates the methods and tools available for use in the Final EIS on Vegetation Management in the Coastal Plain/Piedmont. Biological methods are not allowed. All tools specified for prescribed fire, herbicide, and manual methods are available for use. For mechanical methods, all tools are available except raking and heavy disking.

Chapter 3. FOREST-WIDE MANAGEMENT REQUIREMENTS

Following Page III-16 Add the necessary pages to include Vegetation Management as a Management Practice/Activity with the following management requirements from the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont (ROD - Vegetation Management), Exhibit A, as General Direction and Standards and Guidelines.

I. General Management Requirements and Mitigation Measures:

- A. Site-Specific Analysis 1, 2, 3, 4
- B. T.S.I. 6, 7, 8, 9
- D. Cultural Resources 11, 12
- E. Safety 13
- G. Wildlife 16, 17
- H. Corridors 19, 20, 21, 22, 23
- J. Review and Reporting Requirements 25, 26

II. Method-Specific Management Requirements and Mitigation Measures

- A. Prescribed fire, 1. Site-Specific Planning (27), 2. Vegetation Protection (28), 3. Soil and Water Protection (29), (30), (31), (33), 4. Wetland Protection (34), (35), (36), 5. Air Quality Protection (37), 6. Wildlife (38), (39), (40), 7. General Resource Protection (41), 8. Safety (42)
- B. Mechanical Method, 1. Soil and Water Protection (43), (44), (45), (46), (47), (48), (49), (50), 2. Corridors (52), 3. Safety (53)
- C. Herbicide Method, 1. Labeling (54), 2. Choice of Herbicide (55), (56), 3. Application Rate (57), 4. Application Method (58), 5. Prescribed Burning of Treated Areas (59), 6. Drift Control (60), (61), 7. Supervision and Training (62), (63), 8. Protection of Workers (64), (65), (66), (67), (68), 9. Protection of the General Public and Private Land (69), (70), 10. Protection of Non-target Vegetation (71), 11. Protection of Threatened, Endangered, Proposed, and

Sensitive Species (72), (73), 12. Protection of Water and Soil (74), (75), (76), (77), 13. Aerial Application Operations Plan (78), 14. Control of Spills (79), (80), (81), (82), (83), (84)  
D. Manual Method (85), (86)

These management requirements are either additions or expand on those presently in the Forest Plan.

General Management Requirements and Mitigation Measures in the Record of Decision are covered in the Forest Plan for:

- B. T.S.I. (5) (in Forest-Wide Standards page III-11)
- C. Soil, Water, and Aquatic Life (10) (in Forest-Wide Standards page III-14)
- F. Visual Quality (14), (15) in Forest-Wide Standards pages III-6, III-7, III-8)
- G. Wildlife (18) (in Forest-Wide Standards pages III-9 and III-10)

Method-Specific Management Requirements and Mitigation Measures in the Record of Decision are covered in the Forest Plan for:

- A. Prescribed Fire, 3. Soil and Water Protection (32) (in Forest-Wide Standards page II-15)
- B. Mechanical Method, 1. Soil and Water Protection (51) (in Forest-Wide Standards page III-14).

General Mitigation Measure for Range Forage (24) does not apply to the Croatan/Uwharrie National Forest Land and Resource Management Plan.

This amendment is not a significant change in the Croatan/Uwharrie LRMP. The determination that this a nonsignificant amendment is made in accordance with 36 CFR 219.10 (f) and Forest Service Manual Chapter 1920 (53 Fed. Reg., 26807, July 15, 1988). This amendment does not alter the multiple-use goals and objectives for long-term land and resource management. This amendment adds more specific direction and standards and guidelines for vegetation management in the general Forest area and wilderness. The amendment does not involve an increase or decrease in resource demands. In summary, this direction for vegetation management does not alter the long-term relationship between levels of multiple-use goods and services projected by the LRMP.

The NEPA analysis for this change of direction has been documented in the Draft and Final EIS for Vegetation Management in the Coastal Plain/Piedmont. The EIS is available for review at the Forest Supervisor's office.

Management requirements and mitigation measures not specifically covered in the Croatan/Uwharrie National Forest Land and Resource Management Plan but developed or expanded in the Final EIS for Vegetation Management in the Coastal Plain/Piedmont will be found in appendix K of the Plan.

SUMTER NATIONAL FOREST  
LAND AND RESOURCE MANAGEMENT PLAN

Amendment #4  
January 1989

This amendment incorporates the methods and tools available for use in the Final EIS on vegetation management in the Coastal Plain/Piedmont. Biological tools are not allowed. All tools specified for prescribed fire, herbicide and manual methods are available for use. For mechanical methods, all tools are available except raking and heavy disking.

Chapter IV. Forest-wide Standards and Guidelines -

Page IV-4 Add the following from Exhibit A - Management Requirements and Mitigation Measures of the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont:

General Management Requirements and Mitigation Measures (1) to (4), (6) to (23), (25), and (26).

Method-Specific Management Requirements and Mitigation Measures (27) to (35) and (37) to (86).

Item (5) of the General Management Requirements and Mitigation Measures is more specifically defined in the existing Forest-wide Standards and Guidelines. Requirement (24) of the General Management Requirements and Mitigation Measures and item (36) of the Method-Specific Management Requirements and Mitigation Measures are not applicable to the Sumter National Forest.

This amendment is not a significant change in the Sumter National Forest LRMP. The determination that this is a nonsignificant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual Chapter 1920 (53 Fed. Reg. 26807, July 15, 1988). This amendment does not alter the multiple-use goals and objectives for long-term land and resource management or involve an increase or decrease in resource demands.

The NEPA analysis for this change of direction has been documented in the Draft and Final EIS for Vegetation Management in the Coastal Plain/Piedmont. The EIS is available for review at the Forest Supervisor's office.



FRANCIS MARION NATIONAL FOREST  
LAND AND RESOURCE MANAGEMENT PLAN

Amendment #3  
January 1989

This amendment incorporates the methods and tools available for use in the Final EIS on vegetation management in the Coastal Plain/Piedmont. Biological tools are not allowed. All tools specified for prescribed fire, herbicide and manual methods are available for use. For mechanical methods, all tools are available except raking and heavy disking.

Chapter IV. Forest-wide Standards and Guidelines -

Page IV-8 Add the following from Exhibit A - Management Requirements and Mitigation Measures of the Record of Decision for Vegetation Management in the Coastal Plain/Piedmont:

General Management Requirements and Mitigation Measures (1) to (4), (6) to (23), (25), and (26).

Method-Specific Management Requirements and Mitigation Measures (27) to (43) and (46) to (86).

Item (5) of the General Management Requirements and Mitigation Measures is more specifically defined in the existing Forest-wide Standards and Guidelines. Item (24) of the General Management Requirements and Mitigation Measures and item (44) and (45) of the Method-Specific Management Requirements and Mitigation Measures are not applicable to the Francis Marion National Forest.

This amendment is not a significant change in the Francis Marion National Forest LRMP. The determination that this is a nonsignificant amendment is made in accordance with 36 CFR 219.10(f) and Forest Service Manual Chapter 1920 (53 Fed. Reg. 26807, July 15, 1988). This amendment does not alter the multiple-use goals and objectives for long-term land and resource management or involve an increase or decrease in resource demands.

The NEPA analysis for this change of direction has been documented in the Draft and Final EIS for Vegetation Management in the Coastal Plain/Piedmont. The EIS is available for review at the Forest Supervisor's office.



NATIONAL FORESTS AND GRASSLANDS - TEXAS  
LAND AND RESOURCE MANAGEMENT PLAN

Amendment #1  
January 1989

This amendment incorporates the methods and tools available for use in the Final EIS on Vegetation Management in the Coastal Plain/Piedmont. Biological methods are not allowed. All tools specified for prescribed fire, herbicide, and manual methods are available for use. For mechanical methods, all tools are available except raking and heavy disking.

CHAPTER IV - FOREST MANAGEMENT DIRECTION

Following page IV-89 of the Forest Land and Resource Management Plan add the following Management Requirements (MR's) and Mitigation Measures (MM's) from Exhibit A, Record of Decision (ROD), Vegetation Management EIS, Coastal Plain/Piedmont, as Section H, entitled General Direction and Standards and Guides for Vegetation Management.

I. General Management Requirements and Mitigation Measures:

- A. Site-Specific Analysis (1)-(4)
- C. Soil, Water, and Aquatic Life (10)
- E. Safety (13)
- F. Visual Quality (14)-(15)
- G. Wildlife (16)-(18)
- H. Corridors (19)-(23)
- I. Range Forage (24)
- J. Review and Reporting Requirements (25)-(26)

II. Method-Specific Management Requirements and Mitigation Measures

- A. Prescribed Fire
  - 1. Site-Specific Planning (27)
  - 3. Soil & Water Protection (29)-(33)
  - 4. Wetland Protection (34)-(35)
  - 5. Air Quality Protection (37)
  - 6. Wildlife & Habitat Protection (38)-(40)
  - 7. General Resource Protection (41)
  - 8. Safety (42)
- B. Mechanical Method
  - 1. Soil & Water Protection (43)-(51)
  - 2. Corridors (52)
  - 3. Safety (53)
- C. Herbicide Method
  - 1. Labeling (54)
  - 2. Choice of Herbicide (55)-(56)
  - 3. Application Rate (57)
  - 4. Application Method (58)

5. Prescribed Burning of Treated Areas (59)
6. Drift Control (60)-(61)
7. Supervision and Training (62)-(63)
8. Protection of Workers (64)-(68)
9. Protection of General Public and Private Land (69)-(70)
10. Protection of Non-Target Vegetation (71)
11. Protection of Threatened, Endangered, Proposed, and Sensitive Species (72)-(73)
12. Protection of Water and Soil (74)-(77)
13. Aerial Application Operations Plan (78)
14. Control of Spills (79)-(84)

D. Manual Method (85)-(86)

These management requirements are either additions or expand on those presently in the Forest Plan. These new requirements replace some of the old standards and guidelines found in Chapter IV of the Forest Plan. Specific deletions are:

1. Forest Plan page IV-36, item (7), under Road Construction.
2. Page IV-54, 16th \* (asterisk) from the top of the page, "Retain at least ... to the required site".
3. Page IV-60, 2nd to the 7th \* (asterisk) "Broadcast application ... to be completed before 1990".
4. Page IV-81, 13th \* (asterisk) "Leave an area ... on each side".

General management requirements and mitigation measures in the Vegetation Management EIS, ROD, numbers (5)-(9), (11), and (12) and method-specific mitigation measure (28) are already covered in the Forest Plan. Method-specific mitigation measure (36) is not applicable to the Forest.

This amendment is not a significant change in the National Forests and Grasslands in Texas Land and Resource Management Plan. The determination that this a nonsignificant amendment is made in accordance with 36 CFR 219.10 (f) and Forest Service Manual Chapter 1920 (53 Fed. Reg., 26807, July 15, 1988). This amendment does not alter the multiple-use goals and objectives for long-term land and resource management. This amendment adds more specific direction and standards and guidelines for vegetation management. The amendment does not involve an increase or decrease in resource demands. In summary, this direction for vegetation management does not alter the long-term relationship between levels of multiple-use goods and services projected by the LRMP.

The NEPA analysis for this change of direction has been documented in the Draft and Final EIS for Vegetation Management in the Coastal Plain/Piedmont. The EIS is available for review at the Forest Supervisor's office.

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